

## CLAIMS

1 <sup>sub</sup> 1. A server in a system providing information  
2 <sup>AI</sup> to a user terminal being able to display a map  
3 comprising:  
4 a database for holding a specific information  
5 document having index information composed of a  
6 plurality of elements out of information documents  
7 having attribute information representing attributes  
8 of service information to be provided as bubble data  
9 in which spatial range information in the three-  
10 dimensional space is associated with retrieval  
11 information for obtaining said service information;  
12 a retrieving unit for retrieving specific  
13 bubble data including coordinate information and  
14 display object attribute information in said bubble  
15 data on the basis of a mapping request, transmitted  
16 from said user terminal, having said coordinate  
17 information on an object displayed on said map and said  
18 display object attribute information representing  
19 attributes of service information to be provided by  
20 said object; and  
21 a notifying unit for notifying said user  
22 terminal of a mapping response having said spatial  
23 range information, said attribute information and  
24 said retrieval information included in said specific  
25 bubble data.

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1           2. The server according to claim 1, wherein  
2 said notifying unit notifies of said mapping response  
3 having spatial range information including a similar  
4 bubble diameter having a diameter according to a scale  
5 of a map displayed on said user terminal and address  
6 information.

1           3. The server according to claim 1, wherein  
2 said database correlates said bubble data with a  
3 unique number by which contents of service information  
4 of said bubble data can be identified, and holds said  
5 bubble data and said unique number.

1           4. A server in a system providing information  
2 to a user terminal being able to display a map  
3 comprising:

4           a database for holding a specific information  
5 page having index information composed of a plurality  
6 of elements relating to attribute information out of  
7 information pages having attribute information  
8 representing attributes of various information  
9 relating to an object or service information relating  
10 to said various information as bubble data in which  
11 spatial range information composed of latitude,  
12 longitude, altitude and a bubble diameter of said  
13 object in the three-dimensional space is associated

09892721.062701

14 with address information for obtaining said service  
15 information;

16 a retrieving unit for retrieving specific  
17 bubble data including coordinate information and  
18 display object attribute information in said bubble  
19 data on the basis of a mapping request, transmitted  
20 from said user terminal, having said coordinate  
21 information in the three-dimensional space composed  
22 of latitude, longitude and altitude of an object  
23 displayed on said map and said display object  
24 attribute information representing attributes of  
25 various information relating to said object displayed  
26 on said map or service information relating to said  
27 various information; and

28 a notifying unit for notifying said user  
29 terminal of a mapping response having said spatial  
30 range information, said attribute information and  
31 said address information of said specific bubble data.

1 5. The server according to claim 4, wherein  
2 said notifying unit notifies of said mapping response  
3 having spatial range information including a similar  
4 bubble diameter having a diameter according to a scale  
5 of a map displayed on said user terminal and address  
6 information.

1 6. The server according to claim 4, wherein

09892721.062701

2 said retrieving unit retrieves said specific bubble  
3 data in another database connected to a network on the  
4 basis of said mapping request.

1 7. The server according to claim 4 further  
2 comprising:

3 a Web information outputting unit for holding  
4 user information; and

5 an address generating unit for generating an  
6 address at which said user information held in said  
7 Web information outputting unit is held.

1 8. The server according to claim 4, wherein  
2 said database holds an animation element to be  
3 displayed on said user terminal in document type  
4 definition information.

1 9. The server according to claim 4, wherein  
2 said database holds an application program element for  
3 displaying said map in document type definition  
4 information.

1 10. The server according to claim 4, wherein  
2 said database holds a communication partner  
3 information element relating to a specific  
4 communication partner in document type definition  
5 information.

09892721-062701

1           11. The server according to claim 4, wherein  
2 said database classifies document type definition  
3 information according to a plurality of elements, and  
4 holds said document type definition information.

1           12. The server according to claim 4, wherein  
2 said database correlates said bubble data with a  
3 unique number by which contents of service information  
4 of said bubble data can be identified, and holds said  
5 bubble data and said unique number.

1           13. The server according to claim 12, wherein  
2 said database holds monitoring bubble data for  
3 detecting a moving object and a bubble diameter of said  
4 monitoring bubble data based on position information  
5 on said moving object, and records a moving object  
6 element by which said moving object can be specified  
7 in a file held in said database.

1           14. The server according to claim 4, wherein  
2 said database records data relating to a similar  
3 bubble diameter having a diameter according to a scale  
4 of a map displayed on said user terminal in a file.

1           15. The server according to claim 4, wherein  
2 said database holds at least either one of history

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3 information of address information caused by an access  
4 of said user terminal and identifier information by  
5 which said user terminal can be identified in a file.

1 16.The server according to claim 4, wherein  
2 said database holds data relating to a counter whose  
3 count value can be changed in a file.

1 17.The server according to claim 4, wherein  
2 said database holds data relating to an accessible  
3 time in a file.

1 18.The server according to claim 4, wherein  
2 said database holds data relating to an application  
3 program for displaying a map on said user terminal in  
4 a file.

1 19.The server according to claim 4, wherein  
2 said database handles address information based on  
3 said spatial range information as an electronic mail  
4 address, and holds said spatial range information  
5 correspondingly to said electronic mail address.

1 20.A server in a system providing information  
2 to a user terminal being able to display a map  
3 comprising:

4 a database for holding a specific home page

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5 having document type definition information composed  
6 of a plurality of tags relating to attribute  
7 information out of home pages having said attribute  
8 information representing attributes of facility  
9 information relating to a building or service  
10 information of said facility information as bubble  
11 data in which spatial range information composed of  
12 latitude, longitude, and altitude and a bubble  
13 diameter of said building in the three-dimensional  
14 space is associated with a uniform resource locator  
15 for obtaining said service information;

16 a retrieving unit for retrieving specific  
17 bubble data including coordinate information and  
18 display object attribute information in said bubble  
19 data on the basis of a mapping request having said  
20 coordinate information in the three-dimensional  
21 space composed of latitude, longitude and altitude of  
22 a building displayed on said map and said display  
23 object attribute information representing attributes  
24 of facility information relating to a building  
25 displayed on said map or service information of said  
26 facility information; and

27 a notifying unit for notifying said user  
28 terminal of a mapping response having said spatial  
29 range information, said attribute information and  
30 said uniform resource locator of said specific bubble  
31 data.

09892721-062701

1 21. The server according to claim 20, wherein  
2 said notifying unit notifies of said mapping response  
3 having spatial range information including a similar  
4 bubble diameter having a diameter according to a scale  
5 of a map displayed on said user terminal and address  
6 information based on said coordinate information  
7 included in said mapping request.

1           22. The server according to claim 20, wherein  
2   said database correlates said bubble data with a  
3   unique number by which contents of service information  
4   of said bubble data can be identified, and holds said  
5   bubble data and said unique number.

1           23.A user terminal in a system providing  
2 information to said user terminal being able to  
3 display a map comprising:

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4      a map information .. outputting unit for
5  outputting map information;

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6           a display unit for displaying an image of an  
7 object on the basis of said map information outputted  
8 from said map information outputting unit;

9           a transmitting unit for transmitting a  
10 mapping request having coordinate information in the  
11 three-dimensional space on said object displayed on  
12 said display unit and display object attribute



29           a mapping data holding unit for correlating  
30   said image geometry displayed by said mapping unit  
31   with said retrieval information included in said  
32   mapping response, and holding said image geometry and  
33   said retrieval information.

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4         a map information outputting unit for
5 outputting map information on an object in the

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6 three-dimensional space;

7 a display unit for displaying an image of said  
8 object on a screen on the basis of said map information  
9 outputted from said map information outputting unit;

10 a transmitting unit for transmitting a  
11 mapping request having coordinate information in the  
12 three-dimensional space composed of latitude,  
13 longitude and altitude of said object displayed on  
14 said display unit and display object attribute  
15 information representing attributes of various  
16 information relating to said object or service  
17 information relating to said various information to  
18 a server connected to said user terminal over a  
19 network;

20 a receiving unit for receiving a mapping  
21 response having spatial range information composed of  
22 latitude, longitude, altitude and a bubble diameter  
23 of said object in the three-dimensional space  
24 corresponding to said coordinate information and  
25 address information for obtaining said service  
26 information notified from said server in response to  
27 said mapping request;

28 a mapping unit for displaying an image  
29 geometry along with an image of said object at a  
30 position indicated by said spatial range information  
31 included in said mapping response on said display  
32 unit; and

09892721-062701

33 a mapping data holding unit for correlating  
34 said image geometry displayed by said mapping unit  
35 with said address information included in said mapping  
36 response, and holding said image geometry and said  
37 address information.

1 25.A user terminal in a system providing  
2 information to said user terminal being able to  
3 display a map comprising:

4 a map information outputting unit for  
5 outputting map information on a building in the  
6 three-dimensional space;

7 a display unit for displaying an image of said  
8 building on a screen on the basis of said map  
9 information outputted from said map information  
10 outputting unit;

11 a transmitting unit for transmitting a  
12 mapping request having coordinate information  
13 composed of latitude, longitude, altitude and a bubble  
14 diameter in the three-dimensional space of said  
15 building displayed on said display unit and display  
16 object attribute information representing attributes  
17 of facility information relating to said building or  
18 service information of said facility information to  
19 a server connected to said user terminal over a  
20 network;

21 a receiving unit for receiving a mapping

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22 response having spatial range information composed of  
23 latitude, longitude, altitude and a bubble diameter  
24 of said building in the three-dimensional space  
25 corresponding to said coordinate information and a  
26 uniform resource locator for obtaining said service  
27 information notified from said server in response to  
28 said mapping request;

29 a mapping unit for displaying an image  
30 geometry along with an image of said building at a  
31 position indicated by said spatial range information  
32 included in said mapping response on said display  
33 unit; and

34 a mapping data holding unit for correlating  
35 said image geometry displayed by said mapping unit  
36 with said uniform resource locator included in said  
37 mapping response, and holding said image geometry and  
38 said uniform resource locator.

1 26.The user terminal according to claim 25,  
2 wherein said receiving unit receives said mapping  
3 response having spatial range information including  
4 a similar bubble diameter having a diameter according  
5 to a scale of said map displayed on said display unit  
6 and address information based on said coordinate  
7 information included in said mapping request.

1 27.The user terminal according to claim 25

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2 further comprising a detecting unit for detecting  
3 position information including a latitude of an object,  
4 a longitude thereof, an altitude thereof, a direction  
5 thereof, and an inclination angle thereof in the three  
6 dimensional space.

1 28.The user terminal according to claim 27,  
2 wherein said detecting unit comprises at least any one  
3 of a direction sensor being able to measure the  
4 direction, a satellite information receiving unit  
5 being able to receive satellite information through  
6 the use of a global positioning system, and an  
7 inclination sensor being able to measure an  
8 inclination angle of said user terminal with respect  
9 to the horizontal line.

1 29.The user terminal according to claim 25,  
2 wherein said transmitting unit transmits said mapping  
3 request using an electronic mail address generated on  
4 the basis of said coordinate information.

1 30.An information providing service system  
2 providing information to a user terminal being able  
3 to display a map comprising:

4 a server for holding a specific information  
5 page having document type definition information out  
6 of information pages having attribute information

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7 representing attributes of various information  
8 relating to an object or service information relating  
9 to said various information and said document type  
10 definition information composed of a plurality of  
11 elements as bubble data in which spatial range  
12 information composed of a latitude of said object, a  
13 longitude thereof, an altitude thereof and a bubble  
14 diameter thereof in the three-dimensional space is  
15 associated with address information for obtaining  
16 said service information;

17       said user terminal connected to said server  
18 over a network to display said various information  
19 retrieved using said bubble data;

20       said server comprising:

21               a database for holding said bubble  
22 data;

23               a retrieving unit for retrieving  
24 specific bubble data including coordinate  
25 information and display object attribute information  
26 in said bubble data on the basis of a mapping request  
27 having said coordinate information in the three-  
28 dimensional space composed of a latitude of said  
29 object, a longitude thereof and an altitude thereof  
30 displayed on said map and said display object  
31 attribute information representing attributes of  
32 various information relating to said object or service  
33 information relating to said various information

09892721.062701

34 transmitted from said user terminal;

35 a notifying unit for notifying said

36 user terminal of a mapping response having said space

37 region information, said attribute information, and

38 said address information of said specific bubble data;

39 said user terminal comprising:

40 a map information outputting unit for

41 outputting map information on an object in the

42 three-dimensional space;

43 a display unit for displaying an image

44 of an object on a screen on the basis of said map

45 information outputted from said map information

46 outputting unit;

47 a transmitting unit for transmitting a

48 mapping request having space region information

49 composed of a latitude of said object, a longitude

50 thereof, an altitude thereof and a bubble diameter

51 thereof in the three-dimensional space of an image of

52 said object displayed on said display unit and

53 attribute information representing attributes of

54 various information relating to said object or service

55 information relating to said various information to

56 said server connected to said user terminal over a

57 network;

58 a receiving unit for receiving a

59 mapping response having spatial range information

60 composed of a latitude of said object, a longitude

09892721 062701  
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61 thereof, an altitude thereof, and a bubble diameter  
62 thereof in the three-dimensional space corresponding  
63 to said space region information and address  
64 information for obtaining said service information  
65 notified from said server in response to said mapping  
66 request;

67 a mapping unit for displaying an image  
68 geometry along with an image of said object at a  
69 position indicated by said space region information  
70 included in said mapping response; and

71 a mapping data holding unit for  
72 correlating said image geometry displayed by said  
73 mapping unit with said address information included  
74 in said mapping response, and holding said image  
75 geometry and said address information.

1 31. An information providing service  
2 system providing information to a user terminal being  
3 able to display a map comprising:

4 a database for holding a specific information  
5 page having document type definition information out  
6 of information pages having attribute information  
7 representing attributes of various information  
8 relating to an object or service information relating  
9 to said various information and said document type  
10 definition information composed of a plurality of  
11 elements as bubble data in which spatial range

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12 information composed of a latitude of said object, a  
13 longitude thereof, an altitude thereof and a bubble  
14 diameter thereof in the three-dimensional space is  
15 associated with address information for obtaining  
16 said service information;

17 a user terminal connected to said database  
18 over a network to display said various information  
19 retrieved using said bubble data;

20 a retrieving unit for retrieving specific  
21 bubble data including coordinate information and  
22 display object attribute information in said bubble  
23 data on the basis of a mapping request having said  
24 coordinate information in the three-dimensional  
25 space composed of a latitude of said object, a  
26 longitude thereof and an altitude thereof displayed  
27 on said map and said display object attribute  
28 information representing attributes of various  
29 information relating to said object or service  
30 information relating to said various information;

31 a notifying unit for notifying said user  
32 terminal of a mapping response having said spatial  
33 range information, said attribute information and  
34 said address information of said specific bubble data;

35 said user terminal comprising:

36 a map information outputting unit for  
37 outputting map information on an object in the  
38 three-dimensional space;

09892721.062701

39 a display unit for displaying an image  
40 of said object on a screen on the basis of said map  
41 information outputted from said map information  
42 outputting unit;

43 a transmitting unit for transmitting a  
44 mapping request having coordinate information  
45 composed of a latitude of said object, a longitude  
46 thereof, an altitude thereof and a bubble diameter  
47 thereof in the three-dimensional space displayed on  
48 said display unit and attribute information  
49 representing attributes of various information  
50 relating to said object or service information  
51 relating to said various information to said server  
52 connected to said user terminal over a network;

53 a receiving unit for receiving a  
54 mapping response having spatial range information  
55 composed of a latitude of said object, a longitude  
56 thereof, an altitude thereof and a bubble diameter  
57 thereof in the three-dimensional space corresponding  
58 to said spatial range information and address  
59 information for obtaining said service information  
60 notified from said server in response to said mapping  
61 request;

62 a mapping unit for displaying an image  
63 geometry along with an image of said object at a  
64 position indicated by said spatial range information  
65 included in said mapping response on said display

09892721.062701

66 unit; and

67 a mapping data holding unit for  
68 correlating said image geometry displayed by said  
69 mapping unit with said address information included  
70 in said mapping response, and holding said image  
71 geometry and said address information.

1 32. An information providing service  
2 method in a system providing information to a user  
3 terminal being able to display a map comprising the  
4 steps of:

5 a selecting step of selecting an object  
6 displayed on a map by said user terminal;

7 a user terminal transmitting step of  
8 transmitting coordinate information relating to said  
9 object selected at said selecting step and display  
10 object attribute information representing attributes  
11 of service information to be provided by said object  
12 from said user terminal to a server connected to said  
13 user terminal over a network;

14 a server transmitting step of transmitting  
15 spatial range information, attribute information and  
16 address information to said user terminal from said  
17 server on the basis of said coordinate information and  
18 said display object attribute information  
19 transmitted at said user terminal transmitting step;  
20 and

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1            33.        An information providing service  
2    method in a system providing information to a user  
3    terminal being able to display a map comprising the  
4    steps of:

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8         a selecting step of selecting an object from
9 map information displayed at said map displaying step
10 in said user terminal;

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19 a retrieving step of retrieving by said server  
20 specific bubble data including coordinate  
21 information and display object attribute information

22 in bubble data in which spatial range information  
23 composed of a latitude of said object, a longitude  
24 thereof, an altitude thereof and a bubble diameter  
25 thereof in the three-dimensional space is associated  
26 with address information for obtaining service  
27 information provided by said object on the basis of  
28 said mapping request at said transmitting step;

29 a notifying step of notifying said user  
30 terminal from said server of a mapping response having  
31 said spatial range information and said address  
32 information of said specific bubble data retrieved at  
33 said retrieving step;

34 a mapping step of displaying an image geometry  
35 along with said object at a position indicated by said  
36 spatial range information included in said mapping  
37 response notified at said notifying step on said  
38 display unit in said user terminal; and

39 a providing step of providing said image  
40 geometry and said map displayed at said mapping step  
41 to said user terminal.

1 34. The information providing service method  
2 according to claim 33, wherein at said map displaying  
3 step, said user terminal displays said map on said  
4 screen on the basis of at least either one of the  
5 latitude or the longitude obtained.

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4           a changing step of outputting a similar bubble  
5   diameter having a diameter according to a scale of said  
6   map displayed on said display unit of said user  
7   terminal from said server on the basis of said  
8   coordinate information included in said mapping  
9   request transmitted at said transmitting step; and

1           36. The information providing service method  
2 according to claim 35, wherein at said changing step,  
3 said server changes said similar bubble diameter on  
4 the basis of at least any one of the number of accesses,  
5 an accessible time and an accessible season.

1           38.The information providing service method  
2   according to claim 33, wherein at said retrieving step,

3 said server retrieves using a counter whose count  
4 value can be changed by an access.

1 39.The information providing service method  
2 according to claim 38, wherein at said retrieving step,  
3 said server nullifies a predetermined file when said  
4 count is stopped.

1 40.The information providing service method  
2 according to claim 33, wherein at said retrieving step,  
3 retrieval is performed on the basis of the number of  
4 accesses that said server can receive concurrently.

1 41.The information providing service method  
2 according to claim 33, wherein at said retrieving step,  
3 retrieval is performed on the basis of communication  
4 partner information relating to a specific  
5 communication partner.

1 42.The information service providing method  
2 according to claim 33, wherein said retrieving step  
3 comprises the steps of:

4 a reading step of reading communication  
5 partner bubble data agreeing with information set  
6 beforehand relating to said communication partner in  
7 said server;

8 a present position information receiving step

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9 of receiving present position information on said user  
10 terminal by said server; and

11 an approach detecting step of detecting  
12 approach of said user terminal and said communication  
13 partner to each other by said server on the basis of  
14 said communication partner bubble data and said  
15 present position information.

1 43. An information service providing method in  
2 a system providing information to a user terminal  
3 being able to display a map comprising the steps of:

4 a map displaying step of displaying a map on  
5 a display unit displaying an image in said user  
6 terminal;

7 a selecting step of selecting an object from  
8 map information displayed at said map displaying step  
9 in said user terminal;

10 a transmitting step of transmitting a mapping  
11 request having coordinate information composed of a  
12 latitude of said object, a longitude thereof, an  
13 altitude thereof and a bubble diameter thereof in the  
14 three-dimensional space selected at said selecting  
15 step and display object attribute information  
16 representing attributes of various information  
17 relating to said object or service information  
18 relating to said various information from said user  
19 terminal to a server connected to said user terminal

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20 over a network;

21 a retrieving step of retrieving by said server  
22 specific bubble data including said coordinate  
23 information and said display object attribute  
24 information in bubble data in which spatial range  
25 information composed of a latitude of said object, a  
26 longitude thereof, an altitude thereof and a bubble  
27 diameter thereof in the three-dimensional space is  
28 associated with address information for obtaining  
29 various information relating to said object or service  
30 information relating to said various information on  
31 the basis of said mapping request at said transmitting  
32 step;

33 a notifying step of notifying said user  
34 terminal from said server of a mapping response having  
35 said spatial range information and said address  
36 information of said specific bubble data retrieved at  
37 said retrieving step; and

38 a mapping step of displaying an image geometry  
39 along with said object at a position indicated by said  
40 spatial range information included in said mapping  
41 response on said display unit of said user terminal  
42 on the basis of said specific bubble data notified at  
43 said notifying step.

1 44. An information providing service method in  
2 a system providing information to a user terminal

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3 being able to display a map comprising the steps of:  
4 an information page recording step of  
5 recording a specific information page composed of a  
6 plurality of elements relating to attribute  
7 information out of information pages having said  
8 attribute information representing attributes of  
9 various information relating to an object or service  
10 information relating to said various information in  
11 a database by said user terminal;

12 a bubble data registering step of registering  
13 by said server bubble data in which spatial range  
14 information composed of a latitude of said object, a  
15 longitude thereof, an altitude thereof and a bubble  
16 diameter thereof in the three-dimensional space is  
17 associated with address information for obtaining  
18 said service information on the basis of said  
19 information page recorded at said information page  
20 recording step; and

21 a providing step of providing information  
22 generated from said bubble data registered at said  
23 bubble data registering step from said server to said  
24 user terminal.

1 45. The information providing service method  
2 according to claim 44, wherein said bubble data  
3 registering step comprises the steps of:

4 a specific document type definition

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5 information extracting step of extracting by said  
6 server plural pieces of specific document type  
7 definition information having a predetermined  
8 element out of said document type definition  
9 information of said information pages recorded at said  
10 information page recording step; and

11 a first registering step of registering by  
12 said server said plural pieces of specific document  
13 type definition information as said bubble data.

1 46. The information providing service method  
2 according to claim 44, wherein said bubble data  
3 registering step comprises the steps of:

4 a recording step of recording by said server  
5 said information page recorded at said information  
6 page recording step in another database; and

7 a second registering step of registering by  
8 said server said information page recorded at said  
9 recording step as bubble data in which spatial range  
10 information composed of a latitude of said object, a  
11 longitude thereof, an altitude thereof and a bubble  
12 diameter thereof in the three-dimensional space is  
13 associated with address information for obtaining  
14 said service information on said database.

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